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RELATIONSHIP OF IRRATIONAL IDEAS
TO EMOTIONAL DISTURBANCE

BY



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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Relationship of Irrational Ideas to Emotional Disturbance" submitted by Raymond L. Davies in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

An Adult Irrational Ideas Inventory (A-I-I) was constructed based on the eleven irrational ideas outlined by Ellis and a previous form for adolescents, the I-I Inventory (Zingle, 1965).

The initial version of the A-I-I, which consisted of 99 items, yielded a final 60-item version containing the most discriminating items. This form (termed the A-I-I) was then subjected to validation procedures using over 300 testees.

Reliability estimates, using two procedures, ranged from .74 to .78.

Content validity assumptions were tested using four different criteria. Two distinct procedures were then employed to accrue evidence of construct validity: (1) 51 high school students wrote both the I-I and A-I-I Inventory and the results were correlated (.70) and, (2) A-I-I scores obtained from 82 mental hospital patients, 57 alcoholics, and 113 individuals drawn from the general population of Edmonton were analysed.

In support of Ellis' writings a significant difference was found in irrational beliefs between the representative sample and both the mental hospital patient sample and the alcoholic sample. On the other hand, no difference in irrational beliefs was found between the mental hospital patient sample and the alcoholic sample. When out-patients and in-patients within the alcoholic sample were compared, no difference was found.

A comparison of A-I-I scores between men and women revealed no difference within both the mental hospital patient sample and the alcoholic sample. However, in the representative sample women held significantly more irrational beliefs, as measured by the inventory, than men.

The findings of the study were interpreted as essentially supporting Ellis' writings and also providing positive supportive evidence of a construct validity for the A-I-I Inventory. Uses of the inventory and implications for further possible research were discussed.

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CHAPTER I

INTRODUCTION

There have been in the past, and indeed still are, many theories as to what it is that constitutes good mental health and adjustment. Usually these theories implicitly or explicitly make assumptions about the nature of man, his development, how he learns, what motivates and causes him to behave in a certain manner, and how this behavior can be changed or modified. Also, each theorist usually tries to define in some manner a clear idea of what constitutes good emotional and mental health.

One such theory has been developed by Dr. Albert Ellis, who has spent a good many years in clinical practice. He hypothesizes that good mental health is a function of "rational thinking." Ellis (1962, pp. 60-88) defines what he means by rational thinking and also outlines how this could be achieved by almost everyone. His theory, which is called rational-emotive therapy, was developed to assist individuals to achieve good mental health and adjustment.

Regardless of how accurate or plausible a theory may seem, an accumulation of supportive empirical evidence is essential. Since Ellis has outlined clearly what he considers some of the major irrational and illogical beliefs which exist in our society today, it may be possible to devise an inventory which could accurately measure these. Indeed, a few such instruments have been constructed to date with the express purpose of measuring the extent to which an individual's thinking is irrational. It should be remembered that

irrationality, as it is measured by these inventories, is completely dependent on Ellis' definition. Also, since these eleven ideas are only some of the major illogical beliefs, it is exceedingly difficult for the inventories to be completely comprehensive in measuring irrationality.

One such instrument, called the Personal Beliefs Inventory (PBI), has been developed by Hartman (1968, pp. 7-8). The PBI is made up of 60 items drawn from an original pool of 130. The test uses the Likert-type scale and each item is stated in a simple positive statement. The wording of each item is such that the most rational answer is always "totally agree" so there is no control for acquiescent set. As Deutsch and Krauss (1965) state, when discussing scales of this nature, "...the scales also measure the tendency to agree or disagree and not only what they are intended to measure -- the scales have no clear dimensionality (p. 162)." Although they were dealing specifically here with scales designed to measure prejudice and authoritarianism; it seems evident that the same criticism would apply to an inventory measuring rationality. It would then follow in the case of this particular inventory, that individuals who possessed an agreement response set would obtain a very rational score. It also seems very likely that testees who are prone to mark socially desirable answers would agree on many of these items. The PBI was checked for reliability using the test-retest method and the split-half method. Both methods yielded a high reliability coefficient. This inventory was validated using two groups: (a) 8 individuals undergoing rational-emotive therapy and (b) 23 students studying psychopathology. Both

groups reduced their scores on the PBI but the size of these groups is extremely small for providing sufficient evidence of construct validity. In summary, the construction and validation procedures utilized for the PBI are directly counter to acceptable psychometric practices.

Another such inventory has been developed by Argabrite and Nidorf (1968, pp. 9-11) using just 15 questions. Each question is made up of five statements; the first one is the most rational choice and the fifth one is the most irrational choice. The wording of the items is just about identical to the irrational ideas outlined by Ellis. Although the correlations between this inventory and other more traditional tests are positive, they are "not particularly high." The exact correlations were not reported. Argabrite and Nidorf hypothesize that the low correlation might have occurred because they feel that it is possible to have irrational beliefs without accompanying overt irrational behavior. Considering the length of this inventory (15 items), it is not surprising that there is very little supportive evidence of construct validity. Anastasi (1968) writes, "Other things being equal, a longer test is more valid and reliable than a shorter one (p. 158)."

Zingle (1965) has developed an instrument called the Irrational Ideas (I-I) Inventory. This inventory was designed primarily for high school students and consists of 122 items. The items were selected from a pool of questions consisting of between 12 and 15 for each irrational idea. Since the items are worded such that agreement is sometimes rational and sometimes irrational, the problem of acquiescent set is avoided. The questions are designed to represent an underlying

rational or irrational idea with a clear simple statement. Since the I-I Inventory was designed for, contains content appropriate to, and was used with secondary school students; it must be modified for use with adults. For example, item #51 reads, "If I were able to do so I would attend some other school than the one I am now attending." The reliability coefficient on the I-I Inventory is high (.80) using the test-retest method over a five week period. Construct validity studies on the Zingle instrument have been conducted by Zingle (1965), Taft (1968), and Conklin (1965). All the studies indicate that the I-I Inventory is a valid measure of irrationality.

The preliminary purpose of the present work is to produce an Adult Irrational Ideas (A-I-I) Inventory from Zingle's original I-I Inventory. The second purpose of the study is then to provide some empirical support for the Ellis theory using the newly constructed A-I-I Inventory. Most of the items used in the construction of the A-I-I Inventory are derived either directly from the original I-I Inventory or have been changed slightly. A few items have been added. The final adult form of this inventory consists of 60 items. These 60 items were selected after an item-total correlational analysis of an original 99 item test. Appendix A contains a copy of the initial 99 item version of the A-I-I Inventory. The test was then submitted to two different procedures to derive reliability estimates. Following this, the construct validity was tested by comparing the results of 51 subjects who wrote both the A-I-I and the I-I Inventories. Finally, this study involves a comparison of the test results obtained from

three criterion groups. The three groups were: (1) a group of mental hospital patients, (2) a group of individuals receiving counseling at the Division of Alcoholism, and (3) a representative sample of Edmontonians. From a survey of the literature (see Chapter II), it has been assumed that these groups should differ significantly on the basis of their A-I-I results. The latter portion of the study is designed to accrue construct validity for the A-I-I Inventory and at the same time test the basic assumptions of rational-emotive theory.

CHAPTER II

THEORY AND RELATED LITERATURE

A. Theory of Rational-Emotive Psychotherapy

Rational-emotive psychotherapy (sometimes called rational therapy or RT) is extensively outlined by Ellis (1962). First, he believes that man is a very autosuggestible animal who is able to keep reinforcing himself with ideas learned in the past. That is, man unlike other animals is able to use "self-talk" or "internalized sentences" to initiate and control his behavior. Also, Ellis (1958, p. 70) believes that man is very suggestible, especially during childhood, and therefore can quite easily become indoctrinated by society with irrational and erroneous ideas. Once the individual comes to believe these indoctrinated ideas, he continues to reindoctrinate himself either consciously or unconsciously using "self-talk".

Another central assumption of RT, is the idea that man has both the capacity to be rational and irrational. However, the capacity for irrational thought will almost inevitably lead to emotional upset, unhappiness, and psychological disturbance. It is only by developing his capacity to be rational that man can live a creative, self-fulfilling, and emotionally satisfying life (Ellis and Harper, 1961, p. 183). Thus, by employing rational and logical thinking he can avoid, at least to a very large degree, being burdened with intense guilt, anxiety, and other negative emotions.

Assuming it is true that logical, rational thought can free an individual from many negative emotions and aid him in living a more

emotionally satisfying life; then it follows that thinking and emotion must in some way be related. Indeed, Ellis says:

The theoretical foundations of RT are based on the assumption that human thinking and emotion are not two separate or different processes, but that they significantly overlap and are in some respects, for all practical purposes, essentially the same thing. Like the other two life processes, sensing and moving, they are integrally interrelated and never can be seen wholly apart from each other (1962, pp. 38-39).

Although rational-emotive theory states that emotion can result from sensori-motor processes and stimulation through the cells of the autonomic nervous system; the main emphasis is placed on the assumption that emotion can also be caused by cognitive processes. And although there are a number of ways in which emotion can be controlled or changed such as movement exercises, relaxation techniques, and drugs; it is the emotional control brought about by cognitive processes which is of prime importance to rational therapy. This concept of using "self-verbalizations" and "self-talk" to control emotions is essential to Ellis' theory.

Ellis and Harper (1961, p. 50) agree that it is by no means necessary or even beneficial to try to control most human emotions since many are either pleasurable or only mildly annoying. Rational-emotive therapy deals almost exclusively with sustained negative emotion. Such emotion can only be sustained by the individual repeatedly using "self-verbalizations" and "internal sentences" which cause him to feel this way. It follows then that an individual is in most cases sustaining his emotions by use of cognitive processes.

Sustained negative emotions (other than those caused by continuing physical pain or discomfort) are invariably the result of stupidity, ignorance, or disturbance; and for the most part they may be and should be, eliminated by the application of knowledge and straight thinking (Ellis, 1962, p. 53).

Generally then, most emotional disturbances are basically the result of irrational thinking which the individual is indoctrinating himself with by his own conscious or unconscious internalized sentences.

In rational-emotive psychotherapy, the therapist constantly attempts to aid the client to become aware of the internalized sentences which are causing his disturbance. The therapist believes that most of the emotional upsets and neurotic fears are based on irrational ideas (Ellis, 1958, p. 93). Once these self-verbalizations are discovered, the client is usually instructed to actively work at reindoctrinating himself with more rational and realistic self-talk. He is usually encouraged to actively work at changing his internalized sentences which will eventually aid him in living a much more satisfying life.

The whole process is explained by Ellis as an A-B-C theory. The A in this theory is any particular event or happening which takes place in the environment and C is the individual's emotional reaction. In rational-emotive therapy, the emphasis is on B which is the individual's interpretation of A or more accurately what he tells himself about A. The rational therapist assumes that it is more frequently B which causes the emotional reaction rather than A, the event itself.

Although there are many distinct advantages to thinking and behaving rationally, it is quite easy to fail. Firstly, according to Ellis, humans seem to possess normal biological tendencies toward

irrationality. Secondly, there are many irrational ideas and notions which are taught and upheld by our existing society. While irrational ideas, other than the 11 enunciated in his book are possible, Ellis contends that most such notions could be subsumed under one of the basic 11. Appendix B contains a listing of the irrational ideas.

B. Other Theories Related to Rational-Emotive Psychotherapy

There are many psychologists, psychiatrists, and other individuals working in the area of human personality who agree, at least in part, with the principles of rational-emotive therapy. Much research and clinical observation has yielded supportive evidence for this theory. Some theorists agree almost completely with RT, many others agree with certain aspects of this theory.

Maltz (1960), who has developed the theory of psychocybernetics, states, "Remember both behavior and feeling spring from belief (p.66)." This simply means that the beliefs an individual has about himself will influence his feelings about himself. This in turn will definitely effect and help to determine the type of behavior patterns he employs in attempting to cope effectively in his environment. This same procedure applies not only to beliefs about oneself, but also to beliefs concerning the world around him. It follows then that behind most kinds of ineffectual behavior and negative feelings there is a corresponding erroneous belief. These beliefs are the result of the individual's previous learning and usually continue to exist because the individual has never challenged or questioned them. If an individual experiences psychological disturbance and/or poor coping behavior,

then he should attempt to discover the belief which is at the root of the problem. Once the belief has been recognized, it should be questioned and challenged for in most instances it is usually quite senseless or ridiculous. The irrational ideas outlined by Ellis appear conceptually close to the Maltz type of erroneous belief.

Bard (1966, pp. 34-38) also hypothesizes that the great majority of maladjustments result from false or irrational beliefs. He assumes that man because of cortical tension is motivated to seek relief by forming a belief. Once the belief is formulated, the cortical tension is relieved regardless of how appropriate or inappropriate the particular belief may be. When only a portion of the total stimuli is used in the formation of a belief it can be quite false or at best incomplete. When this happens the individual's whole orientation becomes distorted such that his ability to cope adequately with the environment is hampered. New stimuli, which conflicts with an existing belief and therefore causes tension, is needed before the individual can be motivated to change the original belief.

Konietzko (1968, pp. 27-30) compares the thinking or cognitive processes of an individual to the programming of a computer. He contends that "disturbed behavior" and "emotional illness" are the results of distorted or inappropriate internal programs. Man has a tendency towards ineffective programming because he seems to have a predisposition for grandiose and magical thinking. This process, started in childhood, generally continues into adulthood. By use of repeated cortical evaluation, the individual can sustain emotions. Konietzko (1968) contends that, "The cause of most of our problems is our basic

reluctance to accept reality as it exists (p. 27)." It is thus, only by challenging existing internal sentences and "reprogramming" oneself with more realistic beliefs about self and environment, that the disturbed individual can achieve a happy, self-fulfilling existence.

Another theory, related to rational-emotive therapy is the theory of cognitive dissonance outlined by Festinger (1957). In this theory it is assumed that man is motivated to keep his cognitions (beliefs, attitudes, and opinions) and the happenings in the world around him consistent or in a state of consonance. Since this is not always possible, there are many occasions where an inconsistency or dissonance occurs. That is, where the individual's beliefs and the information provided by the environment become somehow incompatible.

When this incompatibility occurs, the individual is motivated to somehow reduce this dissonance. One such method of reducing the dissonance is to change a behavioral cognitive element. For example, if a person who drinks alcohol excessively becomes convinced that this behavior is extremely detrimental to his health, he can simply stop drinking. This change in behavior will reduce the dissonance. Another method of reducing the existing dissonance is by adding new cognitive elements. This same individual could focus on information which indicated that alcohol had many beneficial effects on the body such as a more relaxed state. Then, in spite of continued heavy consumption of alcohol, the dissonance would be reduced. If the dissonance is not or cannot be reduced sufficiently, then the individual will feel psychologically uncomfortable or in rational-emotive terms experience sustained negative emotions.

If this theory is viewed in terms of Ellis' (1962), it follows that if an individual holds many irrational ideas and beliefs, these will probably be inconsistent with the environment and a state of dissonance will result. For example, an individual may believe that he is not a worthwhile person unless he is liked and approved of by every significant person in his environment. A dissonance will result when he discovers that he is not always able to obtain everyone's approval. Thus it is quite probable that when people believe irrational ideas, there will be a lack of consonance between what they believe and the information available in the environment.

Many of the ideas and philosophies given wide acceptance in our society are quite illogical and irrational according to Ellis (1962, p. 61). Horney (1937, pp. 286-287) illustrates Ellis' point of view. She contends that since personal worth in society is synonymous with success, people become extremely competitive. This in turn leads to an inordinate fear of failure and fear of retaliation for aggressive behavior. Because everyone is a potential competitor, the individual becomes isolated from others. This leads to an intensified need for love and approval. Also, Horney (1937, pp. 288-290) states that many of society's desirable goals are quite contradictory. Competition and success can be incompatible with cooperation and brotherly love. Also, the individual's needs are being constantly stimulated and yet it is impossible for the majority of the population to fulfill these needs. Horney feels that ideas such as these can aid in causing widespread anxiety and emotional disturbance.

Other authors have explored the possibility that cognitions have corresponding emotional reactions. Rokeach (1968) contends that when a very central belief is disrupted by external stimuli, a strong anxiety reaction will result. He states that, "beliefs about self-identity are not the only primitive beliefs which, if disrupted by those in a position to know, lead to strong emotional disturbance (p. 18)." This would seem to imply that if ones' primary beliefs were quite irrational, they might be open to disruption by certain external stimuli. Each belief then, tends to have a resulting affect and also certain behavioral components. This generally supports the assumption that thinking can and usually does influence or determine the emotions which the individual experiences. This relationship of cognitive processes to emotion is similar to that hypothesized in rational-emotive therapy.

Luria and Yudovich (1959) have attempted to study the role that speech plays in cognitive processes. They feel, "...that speech plays a vital part in the organization of complex forms of mental activity (p. 25)." Language enriches perception and becomes a "higher regulator" of behavior. Human beings, once they are able to speak, have two signal systems. The first is directly related to the experiencing of external stimuli while the second consists of verbal reflection and interpretation. This second signal system allows the individual to modify and regulate the external stimuli which he is experiencing. This gives man the ability to reinforce mental conditioning where reinforcement has ceased to exist in the environment. This is a possible explanation of why fear of many harmless objects can be maintained without visibly being reinforced. The "self-talk" and "internalized

sentences" which Ellis talks about in rational-emotive therapy are similar to this second signal system. Thus, strong support exists for the hypothesis that speech directly influences the formation of complex human activity and thereby raises mental processes to a new level. This theory gives support to the basic RT tenet that once an individual believes an irrational idea, he is able to keep reindoctrinating himself by the use of language even in the absence of external reinforcement.

Related Research

There have been a number of experiments and studies which explicitly show the relationship between "inadequate coping behavior" or emotional disturbance and irrational beliefs. Many studies have indicated that such a relationship seems to exist. There are many manifestations of poor coping behavior or emotional disturbance such as mental illness, alcoholism, and other forms of maladaptive behavior. Ellis (1967, pp. 435-446) suggests that terms such as "mental illness" can be usefully employed as long as the label is not accompanied by a negative evaluative element such as worthless, wicked, or inferior.

Conklin (1965) has shown that there is a positive relationship between academic underachievers and their scores on an irrational beliefs inventory. In this study under-, average, and overachievers were divided on the basis of the difference between their ability as measured by a group intelligence test and their reported grades. The instrument used to obtain an index of rationality was a 25 item scale developed from Zingle's (1965) original 122 item Irrational Ideas

Inventory. The results of this study indicated a positive correlation between academic underachievers and irrational beliefs.

A relationship between anxiety and irrational ideas has been reported by Taft (1968). Using Zingle's (1965) Irrational Ideas Inventory as a measure of irrational beliefs and six paper-and-pencil scales as a measure of anxiety, Taft analyzed the results and concluded that in every instance the high irrational belief group also had the higher level of anxiety.

Beck (1966, pp. 4-13), in a study of patients suffering from depression, reports that there is evidence of unrealistic and illogical thinking even in mildly depressed conditions. He also found that there were differences in thought processes between the different depressed groups. That is, the patients who suffered from the most severe depression were those whose thinking seemed to be most illogical and irrational. There was also evidence to show that an individual's cognitive activity actually initiated the state of depression. His general conclusion was that it is very possible that just about all types of psychopathology could be linked to some kind of thinking disorder (p. 13).

Lidz, Cornelison, Terry, and Fleck (1958, pp. 305-316) have reported that irrational thinking seemed to be quite common in the families of 15 schizophrenic patients. They observed the parents and studied the life histories of 15 adult hospitalized schizophrenic patients. The family members were interviewed and observed while interacting with other family members and hospital staff. Old friends, teachers, and nursemaids were interviewed when possible in an effort to

obtain some idea of the family history. Projective tests were also administered to all family members. Each family was studied extensively over a period ranging from 6 months to 3 years. It was found that 9 of the 15 patients had at least one parent who could clearly be diagnosed as either schizophrenic or paranoid in behavior and attitude. In all the families of the schizophrenic patients, the parents were found to have serious communication problems, pronounced degrees of irrationality, and in most families markedly aberrant ways of thinking.

Schopler and Loftin (1969, pp. 281-287) have conducted a study of cognitive processes in the parents of young psychotic children. They tested 3 groups of parents using the Object Sorting Test. It was found that the parents of the psychotic children showed more thought impairment than both the parents of normal children and the parents of retarded children. The authors suggest it is possible that childhood psychosis is related to parental thought impairment (p. 286). In terms of the Ellis theory, if the children are then indoctrinated with illogical concepts and irrational ideas resulting from this parental thinking impairment, emotional disturbance such as psychosis could easily result.

It has been suggested by Gullo (1966, pp. 11-15) that rational-emotive psychotherapy is quite successful in dealing with psychotic patients. For this study, 22 psychotic mental hospital patients were used. They received both group and individual therapy ranging from 3 to 20 sessions. Of this group, 19 were able to be discharged while

only 3 remained in the mental hospital. It appeared that as these patients were able to challenge and correct their irrational thinking, there was an improvement in their condition. The results, although very encouraging, are very subjective and further experimentation should be carried out in a rigorously controlled setting.

One very basic tenet of RT is the relationship of cognitive processes and emotion. Rimm and Stuart (1969, pp. 181-187) have studied the relationship between "self-verbalizations" and emotional response. The subjects were divided into two groups and were required to read triads of sentences. One group read three sentences of information that were emotionally neutral while the second group read triads which were of an affective nature. Using a measure of respiration and the galvanic skin response, each individual's response was recorded. The authors concluded that "self-verbalizations" had a direct effect on emotional arousal (p. 186).

Partington and Johnson (1969, pp. 21-34) have made an extensive study of the personality of alcoholics. They used 186 male patients from an out-patient clinic. One half of these men were married and 60% were employed. The initial diagnosis, interviews by a psychiatrist, notes by the therapists, a verbal intelligence test, and The Differential Personality Inventory (D.P.I.) were used in analyzing the personality types of the 186 men. The analysis revealed 5 distinct categories. Category 1 contained about 20% of the total sample. This group was characterized by their high degree of antisocial behavior. These individuals tended to be relatively young, behaved rebelliously, and showed indications of cognitive disorganization. This thought

disturbance and cognitive disorganization may be interpreted as almost equivalent to irrational and illogical thinking. The second category, which contained 19% of the sample, consisted of patients who were usually social conformists. These patients, although they possessed a high verbal intelligence, had moderate thought disturbances and periodically lost cognitive control. The third category was made up of individuals who were highly neurotic. This group made up only 10% of the total. Category 4 contained 23% of the sample and was made up of patients who appeared quite stable or at least this was the image they were able to project. However, there was evidence to suggest that the members of this group had a high need for social approval and were thus quite skilled at presenting a good self-image. The final group which made up the remaining 28% of the sample scored about the same as the other groups with reference to antisocial behavior and neurotic tendencies. However, they demonstrated less cognitive upset and thought disorder. It should be noted that in 3 of these categories there was evidence of thought disturbance; in 2 categories there was substantial evidence of neurosis; and 1 group appeared to consider social approval as a dire necessity. These 3 elements relate to the rational-emotive theory. An extreme desire for social approval or the idea that it is a dire necessity to be liked or accepted by virtually every other person is Ellis' first irrational idea. Also, Ellis has been very explicit in relating rational thinking to emotional health. It is therefore quite significant that in three categories there was evidence of some type of thought disturbance.

Another study of the alcoholic personality has been conducted by Eckhardt (1967, pp. 277-288). He found that anxiety, tension, or conflict and the availability of alcohol were two very necessary conditions for alcoholism. The particular societal values and attitudes about alcohol was also a very important consideration. Eckhardt concluded that the alcoholic personality tended to be a mixture between that of the neurotic and the sociopath (p. 286).

During the 1969 Canadian Guidance and Counseling Convention held at the University of Alberta, Dr. Ellis stated that he felt alcoholics tended to be borderline psychotics. That is, that alcoholism is more related to emotional disturbance than it is to chance addiction. Ellis (1962, p. 96) hypothesizes that since alcoholism is related to irrational thinking, alcoholics can be successfully treated using rational therapy. This view has been substantiated by Sherman (1967, pp. 20-22) who has counseled alcoholics using the rational-emotive approach. He feels that alcoholism is a variety of neurosis which tends to be perpetuated by irrational beliefs. Working in a clinic which offers aid to alcoholics on both an in-patient and out-patient basis; Sherman has reported good results.

The present study is designed to validate the hypothesis that irrational beliefs are related to emotional disturbance. Using mental hospital patients, alcoholics, and a sample of Edmontonians; the degree of irrationality was measured using the A-I-I Inventory. The mental hospital patients consisted of 82 new admissions to the Alberta Hospital at Oliver. The alcoholics consisted of 30 in-patients being treated at Henwood and 27 out-patients who were receiving counseling at

the Division of Alcoholism. For the third sample, 113 Edmontonians were tested. From Ellis' theory and the related literature the following hypotheses were formulated.

Hypothesis 1

Edmontonians hold fewer irrational beliefs than the mental hospital patients.

Hypothesis 2

Edmontonians have fewer irrational beliefs than the group of alcoholics.

Hypothesis 3

Alcoholics have fewer irrational beliefs than the group of mental hospital patients.

Hypothesis 4

There will be no difference in irrational beliefs between the sexes in any of the three groups.

Hypothesis 5

The alcoholics receiving out-patient treatment at the Division of Alcoholism will not differ in irrational beliefs from the alcoholics receiving in-patient treatment at Henwood.

CHAPTER III

CONSTRUCTION OF THE ADULT IRRATIONAL IDEAS INVENTORY

Preparation of Items

The Adult Irrational Ideas Inventory (A-I-I) was designed to test the eleven irrational ideas outlined by Ellis (1962, pp. 60-88). The majority of the items were taken with permission from the I-I Inventory developed by Zingle (1965). Since this inventory was designed primarily for use with high school students, many of the items underwent a slight revision in an attempt to make them applicable for use with adults without changing the basic idea of the statement. For example, item #71 on the I-I Inventory reads, "This school provides adequate opportunity for me to meet and make friends." This statement was changed to read, "My place of employment and/or neighborhood provide adequate opportunity for me to meet and make friends." Apart from the 122 items of the I-I Inventory, eight additional items were used. Thus, the original pool of items used for the construction of the A-I-I Inventory was 130.

The response mode on the A-I-I Inventory is a conventional five-point Likert scale which ranges from strongly agree to strongly disagree. The statements are worded such that strong agreement is sometimes very rational and sometimes very irrational.

A Rational Agreement Item

I can walk past a graveyard alone
at night without feeling uneasy.

An Irrational Agreement Item

I get very upset when I hear of people
(not close friends or close relatives)
who are very ill.

The inventory is scored such that the most rational choice is given a weighting of one and the most irrational choice a weighting of five. Thus, higher scores indicate a higher degree of irrationality.

The first draft of the A-I-I Inventory (See Appendix A) consisted of 99 items selected from the pool of 130. The inventory was arranged such that each of the eleven irrational ideas had nine corresponding items. Each of the items was subjected to a procedure to establish content validity before it was used. (See Content Validity). The inventory was then administered to 123 subjects.

Item-Total Correlational Analysis

The next step in the construction of the adult form of the I-I Inventory was an item-total correlational analysis. The original 99 item version of the A-I-I Inventory was administered to 123 subjects ranging in age from 13 to 75. This group represented a wide range of occupations and consisted of 66 females and 57 males. The method of item analysis used was a correlation between the total responses for each item and the total scores on the inventory. This procedure yields an item-total correlation for each individual item on the test.

Anastasi (1968) states, "A test whose items were selected by this method can be said to show internal consistency, since each item differentiates in the same direction as the entire test (p. 117)."

This is considered to be more a measure of homogeneity of test items

than it is of external validity. Cronbach writes, "Item analysis carried out in this manner can also be called an internal-consistency test (p. 78)." It would therefore follow that if it can be adequately demonstrated that the great majority of the original inventory items do possess an acceptable degree of construct validity, the internal-consistency provides some limited evidence of content and construct validity. (See Content and Construct Validity). The results of the item analysis showing the item-total correlations are listed below in Table 1.

Final Item Selection

The basic criterion used for the final draft of the A-I-I Inventory was the results of the item-total correlation. All the items which had a correlation of .18 or better were considered. This meant that the corresponding level of significance of each item was .05 or better. The final draft of the A-I-I Inventory then consisted of the 60 items which met the selection criteria. (See Appendix C).

The Final 60-Item Adult Irrational Ideas Inventory

The final draft of the A-I-I Inventory consists of 60 items. Although there were 27 agreement response items on the original 99-item A-I-I Inventory, only 8 of these remained eligible after the results of the item-total correlation had been calculated. The idea that it is more socially desirable to agree than disagree may be one possible explanation as to why only 8 agreement response items correlated significantly with the total scores. These items became numbers

TABLE I

ITEM-TOTAL CORRELATION FOR THE INITIAL
99-ITEM A-I-I (N-123)

ITEM NO.	ITEM- TOTAL r	ITEM NO.	ITEM- TOTAL r	ITEM NO.	ITEM- TOTAL r
1	.248	34	.373	67	.087
2	-.132	35	.388	68	.432
3	-.074	36	.070	69	.170
4	.262	37	.223	70	.410
5	.038	38	.367	71	.382
6	.288	39	.502	72	-.236
7	.289	40	.208	73	.314
8	.120	41	.128	74	.316
9	.121	42	-.108	75	.086
10	.098	43	.241	76	.134
11	.085	44	-.092	77	.347
12	.298	45	.441	78	.302
13	.160	46	-.010	79	.042
14	.203	47	.114	80	.015
15	.141	48	.396	81	.380
16	.319	49	.234	82	.339
17	.464	50	.122	83	.225
18	-.033	51	.293	84	.524
19	.309	52	.113	85	.215
20	-.032	53	.036	86	.082
21	.350	54	.181	87	.246
22	.261	55	-.128	88	.197
23	.314	56	.418	89	.401
24	.175	57	.301	90	.202
25	.200	58	-.178	91	.055
26	.492	59	.116	92	.526
27	.185	60	.339	93	.437
28	.453	61	.375	94	.316
29	.420	62	.092	95	.223
30	.310	63	.202	96	.226
31	.008	64	.220	97	.240
32	.208	65	.398	98	.168
33	.182	66	.126	99	.297

5, 8, 18, 35, 44, 46, and 54 on the final version of the inventory.

The remainder of the items are worded such that strong disagreement is the most rational choice.

On the original version of the A-I-I Inventory each of the eleven irrational ideas had nine corresponding items. That is, there were nine items designed primarily to test each irrational idea. The number of items corresponding to each of the eleven irrational ideas on the final 60-item A-I-I is listed in Table 2.

TABLE 2

THE NUMBER OF ITEMS FOR EACH IRRATIONAL
IDEA ON THE FINAL 60-ITEM A-I-I

IRRATIONAL IDEA NUMBER	NUMBER OF CORRESPONDING ITEMS	THEIR ITEM NUMBER ON THE 60-ITEM A-I-I
1	8	1, 12, 23, 32, 41, 49, 56, 59
2	4	2, 13, 24, 33
3	2	3, 14
4	6	4, 15, 25, 34, 42, 50
5	8	5, 16, 26, 35, 43, 51, 57, 60
6	6	6, 17, 27, 36, 44, 52
7	7	7, 18, 28, 37, 45, 53, 58
8	6	8, 19, 29, 38, 46, 54
9	2	9, 20
10	6	10, 21, 30, 39, 47, 55
11	5	11, 22, 31, 40, 48
	60	

Ellis (1962) states, "These ideas may be classified in various ways, so that the following listing is not meant to be definitive or non-overlapping, but constitutes one of several classificatory approaches which may be taken to modern irrationalities (p. 61)." Ellis is referring here to the eleven irrational ideas. Considering this, it is not necessarily surprising that there is an uneven distribution of items representing each particular erroneous idea. It is also possible that even although these illogical beliefs are quite widespread in our society, they are by no means equal in intensity or universality.

Reliability

Once the final A-I-I Inventory was completed, it was tested for reliability. Goldman (1961, p. 79) recommends the use of both the split-half method and the test-retest method since a test may have internal reliability but not stability over a period of time. The sample used to test reliability consisted of 110 education students enrolled in Educational Psychology 471 during the 1969 summer session. The test-retest method during an approximate 3 week period yielded a Pearson product-moment correlation coefficient of .767. The reliability was also checked using the Kuder-Richardson formula 20. Ferguson states, "It may be shown that if a test is split in all possible ways, the average of all the split-half reliability coefficients with the Spearman-Brown correction is the Kuder-Richardson formula 20 (p. 379)." The KR-20 was calculated on both the pretest and posttest yielding a reliability estimate ranging from .743 to .779.

Validity

A. Content

Shaw and Wright (1967) state, "Content validity is evaluated by determining the degree to which the items of the scale sample the content of the attitude domain...(p. 18)." To establish the content validity of the A-I-I Inventory four criteria were used. Firstly, since virtually all the items used were either taken directly from the original I-I Inventory or merely underwent a slight revision, the content validity established by Zingle (1965, p. 44) provides some supportive evidence of content validity. Secondly, the questions for the 99 item version of the inventory were chosen carefully by the author and no item was used without the concurrence of two judges familiar with the irrational ideas theory. Thirdly, the original version of the A-I-I Inventory was given to Dr. Ellis for scrutiny. His comments are contained in a letter to the author reproduced in Appendix D. Of the twelve items which Dr. Ellis questioned, only three remain in the final version of the inventory. Finally, since the item analysis provides a method by which the most discriminating items are selected, it also adds to the content validity.

B. Construct

Since the A-I-I Inventory is primarily an adult form of Zingle's original, the construct validity already established by Zingle (1965), Taft (1968), and Conklin (1965), is applicable. Confirmation for this contention was obtained by administering both the I-I and A-I-I Inventories to a group of subjects. For this portion of the study, a

group of 51 high school students was used. The group consisted of 27 males and 24 females with a mean age in years of 16.96. The correlation (.70) obtained was significant, thus considerable construct validity is residual in the A-I-I. Also, by using an item-total correlational analysis with items which already have been shown to have construct validity, further limited evidence is provided. Finally, the overall results of the study further substantiate the view that the A-I-I is a valid measure of irrationality.

CHAPTER IV

PROCEDURE AND DESIGN

The Samples

There were three samples used in the study. Their participation was solicited to aid in determining the acceptability of the hypotheses mentioned heretofore, and obliquely to obtain evidence of the construct validity of the Adult Irrational Ideas Inventory (A-I-I Inventory). The three groups included mental hospital patients, individuals receiving counseling for an alcohol problem, and a sample of Edmontonians.

Mental Hospital Patients

The first sample consisted of 82 new admissions to the Alberta Hospital at Oliver. Since treatment is initiated almost immediately after admission to the hospital, only new admissions were selected to participate. Due to the fact that alcoholics were included in the second group, any new patient who had been diagnosed primarily as an alcoholic was excluded from further consideration. Also, any patient who had been diagnosed by resident psychiatrists as suffering from some type of organic psychosis or brain damage did not participate in the study. As the A-I-I Inventory requires a basic English reading ability; retarded patients and those whose understanding of English was limited were not included. The group hereafter designated as mental hospital patients consisted of 34 females and 48 males with a mean age of 36.65. The inventories were administered to the patients on a

strictly voluntary basis.

Alcoholics

Popham and Schmidt (1962, p. 16) state that most of the research dealing with alcoholism definitely refutes the idea that there is a distinct "alcoholic personality". Plaut (1967, p. 34) asserts that it is very rare to find an alcoholic who does not have at least one other serious problem. This sample then, was selected to represent a population of individuals whose lives are in some manner disrupted by alcohol. Since not all individual's who have such a problem seek help, the sample can only be thought of as representative of those who are forced by circumstances or voluntarily seek assistance. This sample was derived from two sources. The first consisted of 30 in-patients receiving treatment at Henwood. Henwood is a provincial institute, located near Edmonton, designed to provide in-patient treatment for alcoholics. The treatment usually lasts from 4 to 10 weeks. Consequently, the 30 patients who participated were at varying stages of treatment. The Henwood portion of the sample was made up of 19 men and 11 women with a mean age of 41.30 years. The second source for the alcoholics sample was the Division of Alcoholism, Edmonton regional office. Here, individuals receive both group and individual counseling on a voluntary out-patient basis. There were 27 individuals, 21 men and 6 women, in this latter group. The mean age of these individuals was 38.26 years. In total, from both Henwood and the Division of Alcoholism, 57 participated. The complete sample, termed the "Alcoholic sample", consisted of 17 women and 40 men with a mean

age of 39.85 years.

General Sample

This sample was selected by design to represent a population of individuals who appear able to cope with their environment. The sample was gathered in Edmonton and consisted of 113 individuals. There were 60 women and 53 men with an average age of 32.58 years. The sample was gathered from many different districts in Edmonton and the participants represented a wide range of occupations. Each participating individual was able to remain anonymous. However, all were requested to state their age, occupation, and sex on the answer sheet. The husband's occupation was requested for married women and the father's occupation was requested for full time school students. In cases where a full time student had only one parent, that parent's occupation was used. The socio-economic status was then calculated from the occupation using the Blishen Scale (1958, pp. 519-531). This scale, which was constructed using weightings based on the number of years of career training and the responsibility required by the occupation, correlates highly with other measures of socio-economic status (Elley, 1961). The Blishen Scale provides values for occupation ranging from 32 to 90 with a mean of 50 and a standard deviation of 10. Elley (pp. 69-70) found a mean of 51.63 and a standard deviation of 9.35 using a sample of over 400 Edmontonians which were selected randomly. When the general sample used in the present study was rated using the Blishen Scale, it was found that the mean was 50.97 and the standard deviation was 9.04. These figures closely resemble those found by Blishen and the random

sample of Edmontonians rated by Elley. It was concluded that this "general sample" was then socio-economically representative of the population of Edmonton.

INVESTIGATION PROCEDURES

Participation by all individuals from each of the three groups was on a voluntary basis. Each person was asked to write the A-I-I Inventory and record their answers on a special I.B.M. answer sheet. The sheets were then scored and the results were analysed. A two by three analysis of variance was used and criterion significance was set at the .05 level. Analysis of variance procedures were employed to determine if differences existed between the three main groups and also between sexes within each of these groups.

CHAPTER V

FINDINGS AND CONCLUSIONS

Introduction

The A-I-I Inventory, it will be recalled, was primarily designed to measure the 11 irrational ideas outlined by Ellis (1962, pp. 60-88). Moreover, arguing from the assumption that the A-I-I Inventory would be capable of measuring irrationality as defined in rational-emotive theory, it was anticipated (Chapter II) that emotionally healthy individuals would score more rationally than individuals exhibiting some type of psychopathology or inadequate coping behavior. It is basic to RE that irrational thinking will almost inevitably lead to psychological disturbance, emotional upset, and unhappiness (Ellis, 1962, p.93). If this tenet is indeed valid, and the A-I-I Inventory is capable of measuring such irrationality; then the hypotheses should be substantiated.

The hypotheses are hereafter separately re-stated accompanied by the relevant findings of the study and the conclusions appropriate to each hypothesis.

Hypothesis 1

Edmontonians hold fewer irrational beliefs than the sample of mental hospital patients.

Findings

The mean score on the inventory for the 82 mental hospital patients was 185.63 as compared to a mean score of 157.66 for the 113

individuals in the general sample. The significance of the difference between means was then determined using Sheffe's multiple comparison of main effects procedure. The results, which are shown in Table 3, indicate that the difference is significant beyond the .01 level.

TABLE 3

SUMMARY, MULTIPLE COMPARISON OF MEANS FOR MAIN
EFFECTS AMONG THE THREE CRITERION GROUPS

GROUPS	CONTRAST	F-RATIO	P	SIGNIFICANT DIFFERENCE
Representative and Alcoholics	-27.54	19.72	0.000005	Yes
Representative and Mental Hospital Patients	-28.10	28.59	0.000002	Yes
Alcoholics and Mental Hospital Patients	- 0.57	0.0074	0.9926	No

Conclusion

This first hypothesis is thus confirmed and it may be concluded that the mental hospital patients are significantly more irrational than the representative sample.

Hypothesis 2

Edmontonians hold fewer irrational beliefs than the sample of alcoholics.

Findings

The 57 alcoholics had a mean score on the A-I-I Inventory of 182.49 while the general sample had a mean score of 157.66. The observed difference was tested again using Sheffe's procedure (see Table 3). The results of this comparison suggest that the difference is significant beyond the .01 level.

Conclusion

Therefore, the second hypothesis is confirmed and it may be concluded that the alcoholics are significantly more irrational than the general sample.

Hypothesis 3

Alcoholics have fewer irrational beliefs than the group of mental hospital patients.

Findings

The mean score of the alcoholic sample compared to the mental hospital sample is 182.49 and 185.63 respectively. Using Sheffe's procedure once more (see Table 3), the means were compared and the difference was found to be not significant.

Conclusion

Based on the evidence of this study, hypothesis 3 is rejected and it is concluded that the alcoholics do not hold fewer irrational beliefs than the mental hospital patients.

Hypothesis 4

There will be no difference in irrational beliefs between the sexes in any of the three groups.

Findings

A two x three analysis of variance was performed to determine the overall effect of sex, group, and sex x group interaction. The results, which are summarized in Table 4, revealed both a significant difference between sexes (.05 level) and a significant sex x group interaction effect (.05 level). These findings are illustrated graphically in Figure 1. Male and female mean scores were then compared within each of the three criterion groups using a one-way analysis of variance procedure. The results of these analyses are depicted in Table 5. It was found that the women in the general sample scored significantly more irrationally (beyond the .01 level) on the A-I-I Inventory than the men. However, in both the alcoholic sample and the mental hospital patient sample, the difference in mean scores between men and women was not significant.

Conclusion

The fourth hypothesis must then be rejected and it is concluded that there is a difference in irrational beliefs between the sexes.

TABLE 4

SUMMARY, ANALYSIS OF VARIANCE OF A-I-I
SCORES FOR SEX AND SAMPLE GROUP

SOURCE	SS	df	MS	F-RATIO	P	SIG. DIFF.
Sex	2899	1	2899.00	4.50	0.035	Yes
Group	46,482	2	23,241.00	36.08	0.000002	Yes
Interaction	4493	2	2246.50	3.49	0.032	Yes
Error	158,453	246	644.12			

TABLE 5

SUMMARY, ANALYSIS OF VARIANCE OF A-I-I SCORES FOR MALES
AND FEMALES WITHIN EACH OF THE THREE CRITERION GROUPS

SOURCE	SS	df	MS	F-RATIO	P	SIG.DIFF.
A. General Sample						
Groups	6530	1	6530.00	12.46	0.0006	Yes
Error	58,150	111	523.87			
B. Alcoholic Sample						
Groups	1452	1	1452.00	2.07	0.156	No
Error	38,575	55	701.36			
C. Mental Hospital Patients						
Groups	334	1	334.00	0.43	0.513	No
Error	61,728	80	771.60			

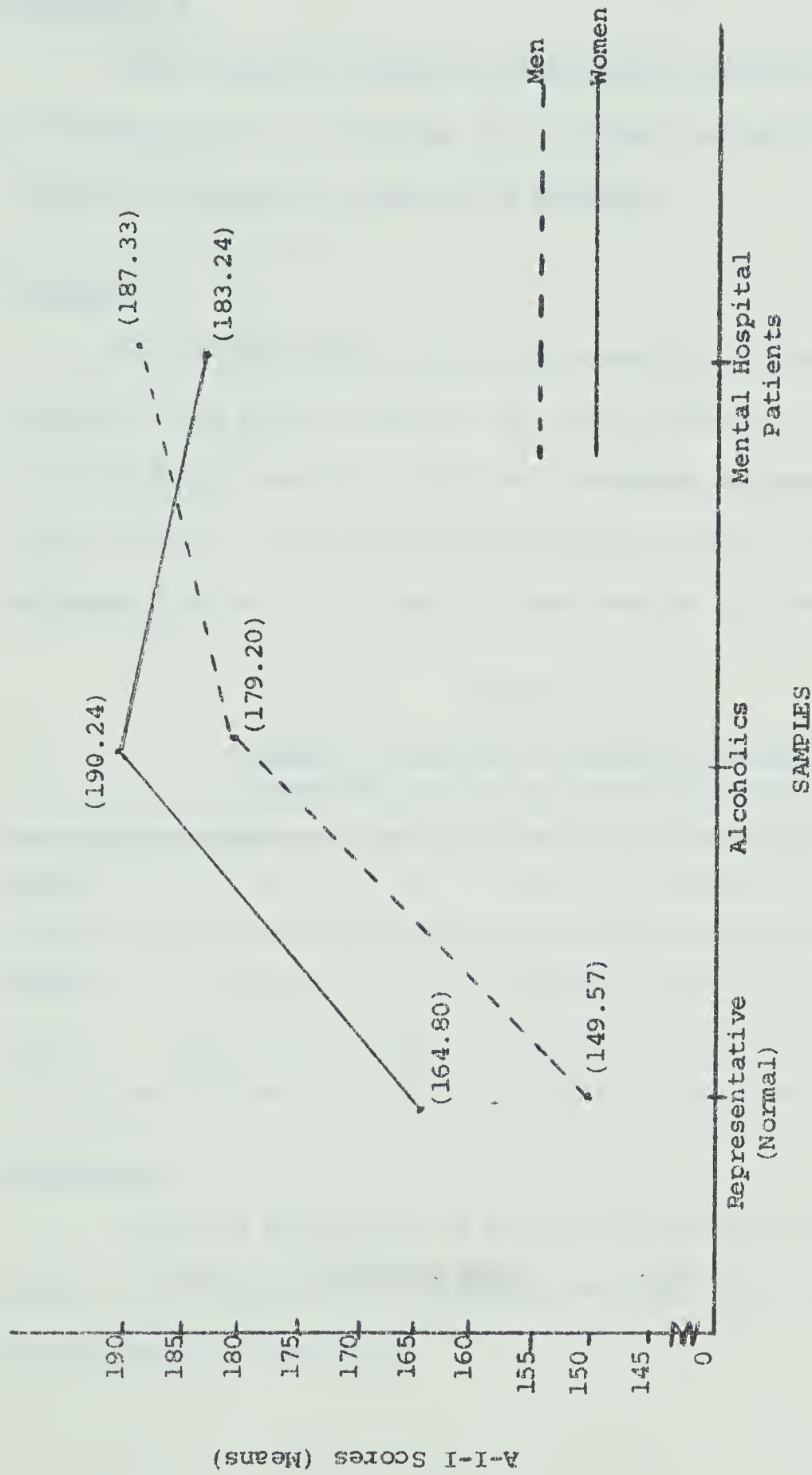


FIGURE 1

GRAPHIC REPRESENTATION OF SEX DIFFERENCES
AND SEX X GROUP INTERACTION

Hypothesis 5

The alcoholics receiving out-patient treatment at the Division of Alcoholism will not differ in irrational beliefs from the alcoholics receiving in-patient treatment at Henwood.

Findings

The 27 individuals receiving counseling at the Division of Alcoholism had a mean score on the A-I-I Inventory of 184.96 while the 30 individuals receiving in-patient treatment at Henwood had a mean score of 180.27. The difference in means, using a one-way analysis of variance, was not significant. These results are depicted in Table 6.

TABLE 6

SUMMARY, ANALYSIS OF VARIANCE BETWEEN IN-PATIENT AND OUT-PATIENT ALCOHOLICS

SOURCE	SS	df	MS	F-RATIO	P	SIG. DIFF.
Groups	314.00	1	314.00	0.43	0.512	No
Error	39,713.00	55	722.05			

Conclusion

The fifth hypothesis is thus confirmed and it is concluded that there is no difference in irrational beliefs between the in-patient and out-patient alcoholics.

SUMMARY OF CONCLUSIONS

In short, the findings support the acceptance of hypotheses 1, 2, and 5. On the other hand, the findings also lead to the rejection of hypotheses 3 and 4. Both the sample of mental hospital patients and the sample of alcoholics had significantly more irrational beliefs than the general sample. However, no significant difference in irrational beliefs was found between the alcoholics and the mental hospital patients. There definitely was a significant sex difference in irrational beliefs as measured by the A-I-I Inventory. In the alcoholic sample no difference in irrational beliefs was found between the in-patients and the out-patients.

Since the mean age of both the alcoholic sample (39.85) and the sample of mental hospital patients (36.65) is somewhat higher than that of the representative sample (32.58), it appeared possible that the results obtained could be due to a positive correlation between A-I-I scores and age. Consequently, this possibility was tested by correlating A-I-I scores and age using the results obtained from the general sample. Considering the low negative coefficient of correlation that was found (-0.12), it is evident that the age differential does not account for the results.

CHAPTER VI

DISCUSSION AND IMPLICATIONS

DISCUSSION

The findings definitely indicate that "irrationality" is associated with, or correlated to, emotional disturbance. It will be recalled that both the mental hospital patients and the alcoholics held more irrational beliefs, as measured by the A-I-I Inventory, than did the general sample drawn from the population of Edmonton. However, from the results of the present study, it would be inappropriate to conclude that these irrational beliefs cause emotional disturbance. On the other hand, this possibility can by no means be discarded. An equally important area for consideration is that of "cure". One cannot automatically assume from these findings that if "irrationality" decreases, emotional problems will also decrease correspondingly. However, considerable research and literature does indicate that, when an individual's irrational thinking is challenged and eventually changed, emotional health and coping behavior is improved (Anderson, 1968, pp. 40-41; Bard, 1966, pp. 34-38; Beck, 1966, pp. 4-13; Diamond, 1968, pp. 13-14; Ellis, 1962; Ellis and Harper, 1961; Gullo, 1966, pp. 11-15; Hartman, 1968, pp. 7-8; and Sherman, 1967, pp. 20-22).

It had been hypothesized that the mental hospital patients would hold more irrational beliefs than the sample of alcoholics. However, the results of the present study do not support such a conclusion. Although alcoholics generally cannot be categorized clearly, many

authors suggest that they are most like neurotics (Eckhardt, 1967, pp. 277-288; Sherman, 1967, p. 21). Consequently, it was hypothesized that alcoholics would hold fewer irrational beliefs than the mental hospital patients who were mostly diagnosed as psychotics. Since psychosis by definition is a more serious disorder than neurosis, it follows that the former should be associated with a higher degree of "irrationality" than the latter. None the less, in the present study, no difference in "rationality" was found. These results provide support for Ellis' belief that alcoholics are probably "borderline psychotics".*

The available literature to date did not indicate that one should expect to find any difference between males and females in the area of "irrationality". Consequently, it was hypothesized that no difference would exist, in A-I-I scores, between sexes for any of the three criterion groups. It is interesting to note that an overall difference for the three groups combined (beyond the .05 level) was found. Also, when the results for each individual group were analysed, the difference was found to be very significant (beyond the .01 level) for the general sample of Edmontonians but not significant in either the alcoholic sample or the mental hospital patient sample. Apart from this, it was found that in the general sample and the alcoholic sample women scored more "irrationally" than men while in the mental hospital

* Personal Communication, Canadian Guidance and Counselling Convention, June, 1969.

patient sample the reverse was true. The hypothesis that there would be no difference between sexes in any of the three groups had to be rejected on the basis of the results from the general sample. This may indicate that such a sex difference is positively related to emotional health. It thus raises the possibility that a breakdown in sex role behavior could be associated with emotional disturbance. This would follow from the observation that as the disturbance became more severe the differences between men and women, on the irrational beliefs dimension, were much less.

Such a phenomena could be explained plausibly in two quite different ways. Firstly, assuming that there is in fact a sex difference in "rationality" in emotionally healthy individuals, it could be due to certain learned sex role behavior and also possible distinct life experiences. It could be argued that, since most men do function daily in some type of vocational endeavor in addition to family life, they would learn to be more rational. Possibly a certain amount of rationality is learned by young boys as part of the whole male sex role. However, it is also possible that in reality there is no difference in irrational beliefs between men and women. Consequently, the measured difference could be due to a test bias or the fact that certain attitudes and beliefs are not as acceptable for men as for women. For example, on items which ask the testee whether he or she is fearful or worried about a particular situation, men may find this generally more difficult to admit regardless of how they actually feel. One such item asks whether the individual is afraid in the dark. An affirmative reply definitely seems more socially acceptable for women

than it is for men.

Hypothesis 5 was included primarily because it was felt that essentially there would be no difference in irrational ideas held by either in-patient or out-patient alcoholics. Basically the individuals from both groups are experiencing a serious problem related to alcohol consumption. When both groups were compared, there was in fact no difference found. It was noted that the in-patients tended to be more rational than the out-patients. However, since the length of treatment for both groups was not recorded and other variables were not considered, it would be impossible to arrive at any valid conclusions based only on this data.

IMPLICATIONS

Use in Counseling

The A-I-I Inventory has potential as an instrument which could aid the counselor in detecting emotional problems and irrational beliefs. If indeed irrational beliefs do cause and help sustain emotional disturbance, negative emotions, and unhappiness; then the A-I-I could be a beneficial instrument. Also, it could provide an objective measurement of client improvement during counseling. Of course, further research and the establishment of norms would be needed before the instrument could effectively provide such a function.

Other Possibilities for Research

Research comparing the general population, along the dimension of irrational beliefs, with other groups such as individuals with neurotic disorders, the chronically unemployed, and those whose

antisocial behavior has resulted in confinement in jail would provide useful information. If irrational beliefs do cause emotional problems and/or impairment in coping behavior, it would be expected that these groups would also be more irrational than a representative sample of the general population.

Is it possible for irrational beliefs to decrease without the individual necessarily experiencing any improvement in emotional health or coping behavior? Can such an improvement actually occur without a corresponding decrease in irrational beliefs? Would an individual's score on the A-I-I Inventory decline during counseling regardless of the orientation of the counselor? These are still unanswered questions which suggest that a great deal of research in this area is indeed possible.

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A P P E N D I C E S

APPENDIX A

The following is a copy of the original A-I-I Inventory

ADULT I-I INVENTORY

Read each of the following statements over and decide how much you agree or disagree. Show your answer on the separate answer page.

Use the code shown below.

	A	B	C	D	E
A. I strongly agree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. I agree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Undecided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. I disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. I strongly disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE

Answer all the questions. (Mark only one choice for each answer).

There are no right or wrong answers.

There is no time limit.

If you wish to change an answer, be certain to erase the undesired answer completely.

1. Jeers humiliate me even when I know I am right.
2. I prefer to get things done very quickly rather than being slow and sure.
3. All human lives are equally valuable.
4. I must learn to "keep my head" when things go wrong.
5. Unhappiness largely comes from within and is largely created by the unhappy person himself.
6. I worry about the possibility of an atomic attack by some foreign power.
7. I am happiest when I am sitting around doing little or nothing.

8. It is better to tell your troubles to your friends than to keep them to yourself.
9. It is very possible for a person to change many of the habits and attitudes learned in the past.
10. It is silly to be upset over the problems of other people.
11. The man who loses his sense of right and wrong has nothing left that is worth keeping.
12. My family and close friends do not take enough time to become acquainted with my problems.
13. It is foolish to let others see your emotions.
14. The best way to teach a child right from wrong is to spank him when he is wrong.
15. When things are not the way I would like them to be, and it is not in my power to change them, I accept things the way they are.
16. I think I am getting a fair deal in life.
17. I worry about eternity.
18. I follow a definite schedule in doing my daily tasks.
19. I prefer to be independent of others in making decisions.
20. If a child is brought up in a home where there is much quarreling and unhappiness he will probably be unhappy in his own marriage.
21. I get upset when I hear of people (not close relatives or close friends) who are very ill.
22. Crime never pays.
23. It is very important to me when I do a good job to be praised.
24. If a person tries hard enough, he can be first in anything.
25. We are justified in refusing to forgive our enemies.
26. I frequently feel unhappy with my appearance.
27. I feel that life has a great deal more happiness than trouble.

28. I worry over possible misfortunes.
29. I often spend more time in trying to think of ways of getting out of something than it would take me to do it.
30. I tend to look to others for the kind of behavior they approve as right and wrong.
31. The boy who regularly stands at the bottom of his class is sometimes a great success after leaving school.
32. Helping others is the very basis of life.
33. School promotions should be for intellectual merit alone.
34. I wish that more affection were shown by members of my family.
35. I worry about situations where I am being tested.
36. The police may sometimes be right in giving a man the "third degree" to make him talk.
37. It is all right to create a scene in order to get one's own way.
38. It is impossible at any given time to change one's emotions.
39. I tend to worry about possible accidents or disasters.
40. I need to learn how to keep from being too assertive or too bold.
41. I prefer to be alone when I am making decisions.
42. Each day it is possible for us to do a better job than we did the day before.
43. Sympathy is the most beautiful emotion of man.
44. If one desperately needs something badly enough and cannot buy it, there are times when it is all right to take it.
45. Sometimes I feel that no one loves me.
46. Too much importance is attached to success and the possession of money in our society.
47. People should not be allowed to escape the blame for their "sinful acts" or misdeeds.
48. It is terribly upsetting the way some students seem to be constantly protesting about one thing or another.

49. My place of employment and/or my neighborhood provide adequate opportunity for me to meet and make friends.
50. It is useless to worry about things that cannot be changed or corrected.
51. I avoid inviting others to my home because it is not as nice as theirs.
52. Children would like school better if teachers were not so strict.
53. It is possible for children to outgrow their bad habits.
54. It is necessary to be especially friendly to new co-workers and neighbors.
55. I find it easy to set standards of "right" and "wrong".
56. It makes me very uncomfortable to be different.
57. People who do not achieve competency in at least one area are worthless.
58. People who perform immoral acts do so because they are too stupid or too ignorant to refrain from doing so.
59. I usually object when a person steps in front of me in a line of people.
60. Riches are a sure basis for happiness in the home.
61. I can walk past a grave yard alone at night without feeling uneasy.
62. I am a naturally lazy person.
63. To cooperate with others is better than doing what you feel should be done.
64. If a person is ill-tempered and moody, he will probably never change.
65. Other peoples problems frequently cause me great concern.
66. Firm beliefs make for strength of character.
67. It is better to have friends than fame and fortune.
68. I find it difficult to take criticism without feeling hurt.
69. People should be punished when they break rules or violate laws.

70. I get very angry when I miss a bus which passes only a few feet away from me.
71. I find that my occupation and social life tends to make me unhappy.
72. I frequently do things that I am afraid of doing in order to prove to myself that there is nothing frightful about these things.
73. I usually try to avoid doing chores which I dislike doing.
74. I prefer to have someone with me when I receive bad news.
75. Habits of pre-school years carried over into adult life may help determine our usefulness.
76. When people are rude and ignorant, I just forget about it and go about my business.
77. People who criticize the government are either ignorant or foolish.
78. I find it very upsetting when important people are indifferent to me.
79. Most people can be truly outstanding in at least one area of their life.
80. People who are punished for their "sins" usually change for the better.
81. I worry about little things.
82. I have sometimes had a nickname which upset me.
83. I can face a difficult task without fear.
84. Many people that I know are so unkind or unfriendly that I avoid them.
85. I like to bear responsibilities alone.
86. A person who will not stand up for his rights as a teen-ager will probably not be able to stand up for his rights as an adult.
87. I get disturbed when neighbors are very harsh with their little children.
88. The good person is usually right.
89. When a friend ignores me I become extremely upset.

90. When a person is no longer interested in doing his best he is done for.
91. Criminals are really sick and should be treated like sick persons.
92. I get terribly upset and miserable when things are not the way I would like them to be.
93. My feelings are easily hurt.
94. I am afraid in the dark.
95. I have sometimes crossed the street to avoid meeting some person.
96. It is better to take risks and to commit possible errors, than to seek unnecessary aid of others.
97. Some people are dull and unimaginative because of defective training as a child.
98. I get annoyed when people are impolite to me.
99. It is sinful to doubt the bible.

APPENDIX B

The Eleven Irrational Ideas Stated by Ellis (1962, pp. 60-88)

Irrational Idea No. 1: The idea that it is a dire necessity for an adult human being to be loved or approved by virtually every significant other person in his community.

No. 2: The idea that one should be thoroughly competent, adequate, and achieving in all possible respects if one is to consider oneself worthwhile.

No. 3: The idea that certain people are bad, wicked, or villainous and that they should be severely blamed and punished for their villainy.

No. 4: The idea that it is awful and catastrophic when things are not the way one would very much like them to be.

No. 5: The idea that human unhappiness is externally caused and that people have little or no ability to control their sorrows and disturbances.

No. 6: The idea that if something is or may be dangerous or fearsome one should be terribly concerned about it and should keep dwelling on the possibility of its occurring.

No. 7: The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities.

No. 8: The idea that one should be dependent on others and needs someone stronger than oneself on whom to rely.

No. 9: The idea that one's past history is an all-important determiner of one's present behavior and that because something once strongly affected one's life, it should indefinitely have a similar effect.

No. 10: The idea that one should become quite upset over other people's problems and disturbances.

No. 11: The idea that there is invariably a right, precise, and perfect solution to human problems and that it is catastrophic if this perfect solution is not found.

APPENDIX C

The following is a copy of the final A-I-I Inventory
which was used in this study

ADULT I-I INVENTORY

Read each of the following statements and decide how much you agree or disagree. Show your answer on the separate answer page.

Use the code shown below.

	A	B	C	D	E
A. I strongly agree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. I agree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Undecided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. I disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. I strongly disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE

Answer all the questions. (Mark only one choice for each question).

There are no right or wrong answers.

There is no time limit.

If you wish to change an answer, be certain to erase the undesired answer completely.

Because the inventory is to be machine scored a soft pencil should be used.

1. Jeers humiliate me even when I know I am right.
2. I worry about situations where I am being tested.
3. The best way to teach a child right from wrong is to spank him when he is wrong.
4. I must learn to "keep my head" when things go wrong.
5. I think I am getting a fair deal in life.
6. I worry about eternity.
7. I am happiest when I am sitting around doing little or nothing.
8. I prefer to be independent of others in making decisions.
9. If a person is ill-tempered and moody, he will probably never change.
10. I get very upset when I hear of people (not close relatives or close friends) who are very ill.
11. Crime never pays.
12. My family and close friends do not take enough time to become acquainted with my problems.
13. People who do not achieve competency in at least one area are worthless.
14. We are justified in refusing to forgive our enemies.
15. I frequently feel unhappy with my appearance.
16. I feel that life has a great deal more happiness than trouble.
17. I worry over possible misfortunes.
18. I often spend more time in trying to think of ways of getting out of something than it would take me to do it.
19. I tend to look to others for the kind of behavior they approve as right and wrong.
20. Some people are dull and unimaginative because of defective training as a child.
21. Helping others is the very basis of life.

22. School promotions should be for intellectual merit alone.
23. It is very important to me when I do a good job to be praised.
24. I find it difficult to take criticism without feeling hurt.
25. It is terribly upsetting the way some students seem to be constantly protesting about one thing or another.
26. It is impossible at any given time to change one's emotions.
27. I tend to worry about possible accidents and disasters.
28. I need to learn how to keep from being too assertive or too bold.
29. To cooperate with others is better than doing what you feel should be done.
30. Sympathy is the most beautiful emotion of man.
31. People who criticize the government are either ignorant or foolish.
32. I wish that more affection were shown by members of my family.
33. When a person is no longer interested in doing his best, he is done for.
34. I get very angry when I miss a bus which passes only a few feet away from me.
35. My place of employment and/or my neighborhood provide adequate opportunity for me to meet and make friends.
36. I can walk past a grave yard alone at night without feeling uneasy.
37. I avoid inviting others to my home because it is not as nice as theirs.
38. I prefer to have someone with me when I receive bad news.
39. It is necessary to be especially friendly to new co-workers and neighbors.
40. The good person is usually right.
41. Sometimes I feel that no one loves me.
42. I worry about little things.

43. Riches are a sure basis for happiness in the home.
44. I can face a difficult task without fear.
45. I usually try to avoid doing chores which I dislike doing.
46. I like to bear responsibilities alone.
47. Other peoples problems frequently cause me great concern.
48. It is sinful to doubt the bible.
49. It makes me very uncomfortable to be different.
50. I get terribly upset and miserable when things are not the way I would like them to be.
51. I find that my occupation and social life tends to make me unhappy.
52. I am afraid in the dark.
53. Many people that I know are so unkind or unfriendly that I avoid them.
54. It is better to take risks and to commit possible errors, than to seek unnecessary aid of others.
55. I get disturbed when neighbors are very harsh with their little children.
56. I find it very upsetting when important people are indifferent to me.
57. I have sometimes had a nickname which upset me.
58. I have sometimes crossed the street to avoid meeting some person.
59. When a friend ignores me I become extremely upset.
60. My feelings are easily hurt.

APPENDIX D

The following is a copy of the letter received by the
author from Dr. Ellis regarding the original A-I-I



Institute for Advanced Study in Rational Psychotherapy

45 East 65th Street, New York, N.Y. 10021 / (212) LEhigh 5-0822

10 June 1969

Ray Davies
5915-103 Street
Edmonton, Alberta
Canada

Dear Mr. Davies:

Thank you for giving me a copy of your Adult Inventory when I was in Edmonton last week. I have read it over and I find that the following items seem to be somewhat weak ones and I would wonder about their descriminitive power. Numbers 6, 8, 20, 37, 49, 52, 64, 73, 75, 86, 97 and 98. Some of these items, are stated, I believe a little too weakly, thus number 6 reads, I worry about the possibility of an atomic attack by some foreign power." First of all, an item like this might better be stated, " I frequently worry about the possibility of an atomic attack by some foreign power. Secondly, I am not clear how the individual would fill out your ABCDE scale for this item, since it is not exactly one that he would agree or disagree with as let us say is item 8. Even item 8, however, though it is stated in a form that it can be agreed with or disagreed with seems to be somewhat weak, because it probably could be reworded along these lines: It is very much better to tell your troubles to your friends than to keep them to yourself.

As I said I would do, I am enclosing a copy of our own experimental inventory. If you have any suggestions on it, I shall be happy to hear from you abou it. Please keep me posted about your own studies, since I am interested in its porgress.

Sincerely yours,

B29937